KOREMAN, I.M.; TUMANOV, A.A.; SOROKINA, V.M.

Composition and solubility of cerium oxinates. Izv.vys.ucheb.zav.; (MIRA 13:9) khim.i khim.tekh. 3 no.4:580 '60. (MIRA 13:9)

l. Nauchno-issledovatel'skiy institut khimii pri Gor'kovskom gosudarstvennom universitete im. N.I.Lobachevskogo, kafedra analiticheskoy khimii. (Cerium compounds) (Quinolinol)

TUMANOV, A. A.

The Second All-Union Conference on the Preparation and Analysis of high-Purity Elements, held on 24-28 December 1963 at Gorky State University im. N. I. Lobachevskiy, was sponsored by the Institute of Chemistry of the Gorky State University, the Physicochemical and Technological Department for Inorganic Materials of the Academy of Sciences USSR, and the Gorky Section of the All-Union Chemical Society im. D. I. Mendeleyev. The opening address was made by Academician N. M. Zhavoronkov. Some 90 papers were presented, among them the following:

M. S. Chupakhin. The prospects for mass-spectroscopic analysis of high-purity solids by isotopic dilution and vacuum spark methods.

A. A. Tumanov. Biological determination of microquantities of Zn, Cu, Cd, Ag and sulfides.

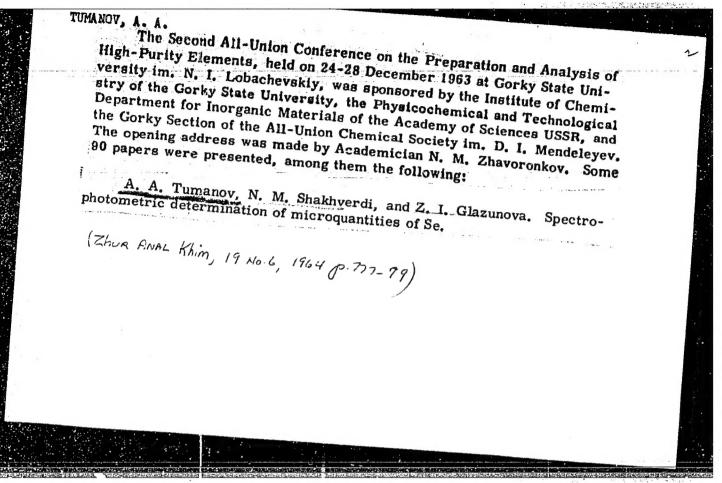
(Zhur. Anal. khim, 19 No.4, 1964 p.777-9)

TUMANOV, A. A.

The Second All-Union Conference on the Preparation and Analysis of High-Purity Elements, held on 24-28 December 1963 at Gorky State University im. N. I. Lobachevskiy, was sponsored by the Institute of Chemistry of the Gorky State University, the Physicochemical and Technological Department for Inorganic Materials of the Academy of Sciences USSR, and the Gorky Section of the All-Union Chemical Society im. D. I. Mendeleyev. The opening address was made by Academician N. M. Zhavoronkov. Some 90 papers were presented, among them the following:

A. A. Tumanov, A. N. Sidorenko, and Ya. I. Korenman. Determination of lodine (up to 10⁻³ micrograms in 5 ml) in Si or Ge semiconductor thin films by means of a catalytic method.

(Zhur ANAL. Khim 19 No.6, 1964 (3.777-79)



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TUMANOV, A. A.

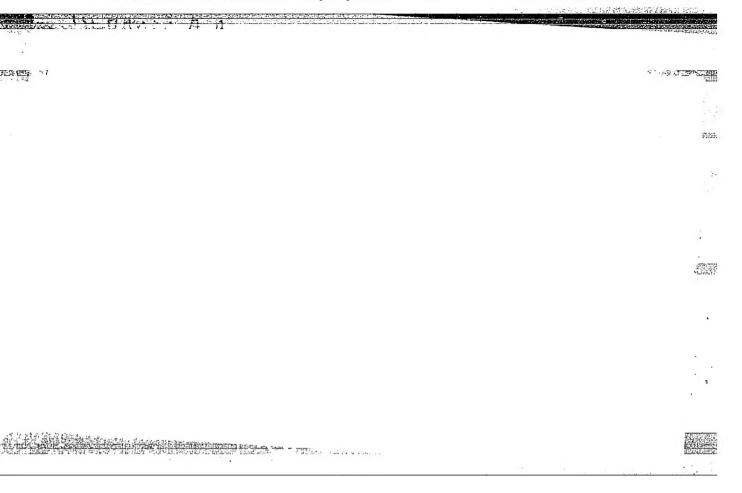
The Second All-Union Conference on the Preparation and Analysis of High-Purity Elements, held on 24-28 December 1963 at Gorky State University im. N. I. Lobachevskiy, was sponsored by the Institute of Chemistry of the Gorky State University, the Physicochemical and Technological Department for Inorganic Materials of the Academy of Sciences USSR, and the Gorky Section of the All-Union Chemical Society im. D. I. Mendeleyev. The opening address was made by Academician N. M. Zhavoronkov. Some 90 papers were presented, among them the following:

A. A. Popel' and Z. A. Saprykovo. Quantitative determination of paramagnetic ions in solution by NMR methods.

I. Ye. Zimakov. Determination of microimpurities (10⁻⁷ to 10⁻⁸%) by repeated radioactive dilution.

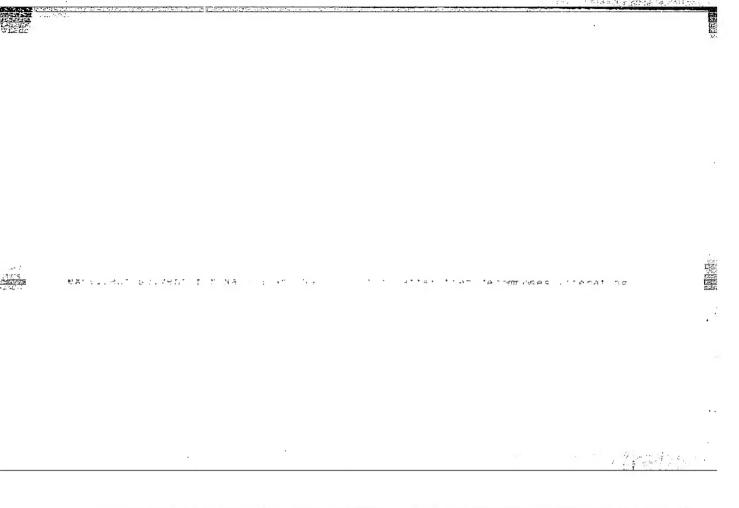
A. A. Tumanov and V. S. Yefimychev. Determination of micro-concentrations with salicylan-2-aminophenol.

(Zhur ANAL Khim, 19 No.6, 1964, p.777-79)



.

TOPIC TAGS: spectry band-ometry, trace analysis, impurity content, ultraviolet



TUMANOV, A. A., and KORENMAN, I. M.

"Coprecipitation of Cadmium With Antipyrine Tetrabromomercuriate," by I. M. Korenman and A. A. Tumanov, Scientific Research Institute of Chemistry at Gor'kiy State University, Zhurnal Analiticheskoy Khimii, Vol 11, No 4, Jul/Aug 56, pp 430-436

In the work described, it was established that cadmium is coprecipitated with mercuric ions when the latter react with antipyrine bromide, forming insoluble antipyrine tetrabromomercuriate. It was furthermore shown that precipitation of mercury in the form of antipyrine tetrabromomercuriate can be used for the separation of small quantities of cadmium present in zinc and copper salts.

Sum 1239

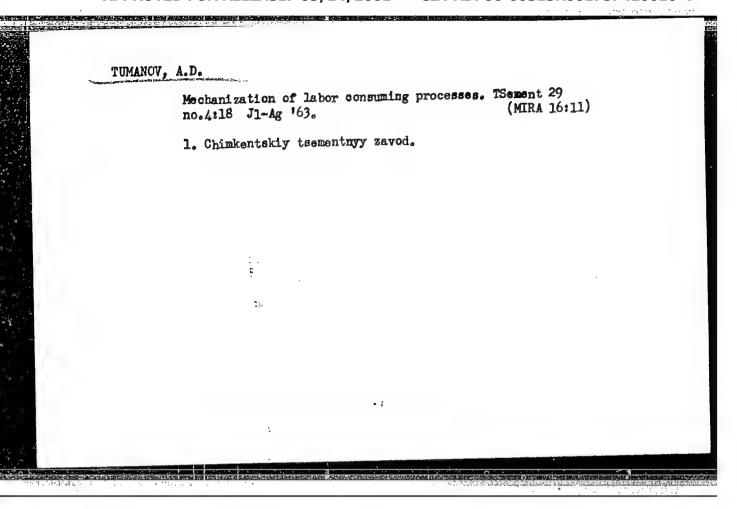
TUMANOV, A.A.; MALKINA, L.A.

Enzymatic catalytic reactions for analytical purpose.

Trudy po khim.i khim.tekh. no.1:118-123 '64.

(MIRA 18:12)

1. Submitted July 10, 1963.



TUMANOV, A.D.; STEPANOV, V.M.

Mastering new capacities. TSement 28 no.5:16-17 S-0 '62.

(MIRA 15:11)

1. Chimkentskiy tsementnyy zavod.

(Chimkent—Cement plants)

Cement exceeding the plan. TSement 31 no.5:19 S-0 '65.

1. Chimkentskiy tsementnyy zavod.

. TUMANOV, A.D., inzh.

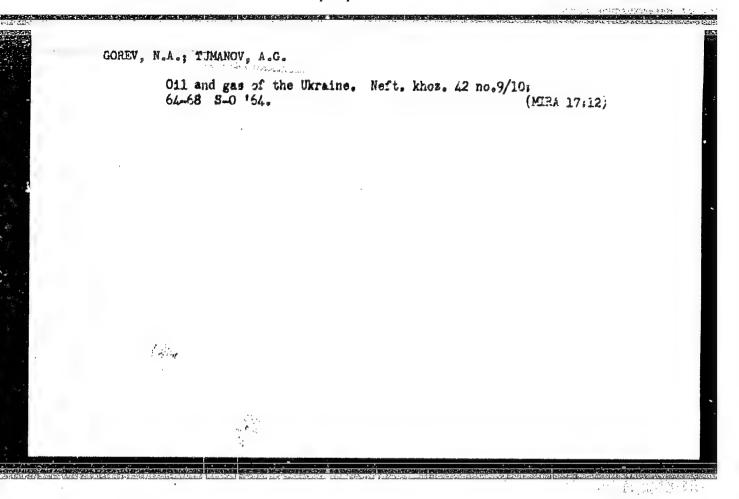
Advantages of bearings made of wood-fiber plastics. TSement 30 no.5: 20 S-0 164. (MIRA 17:12)

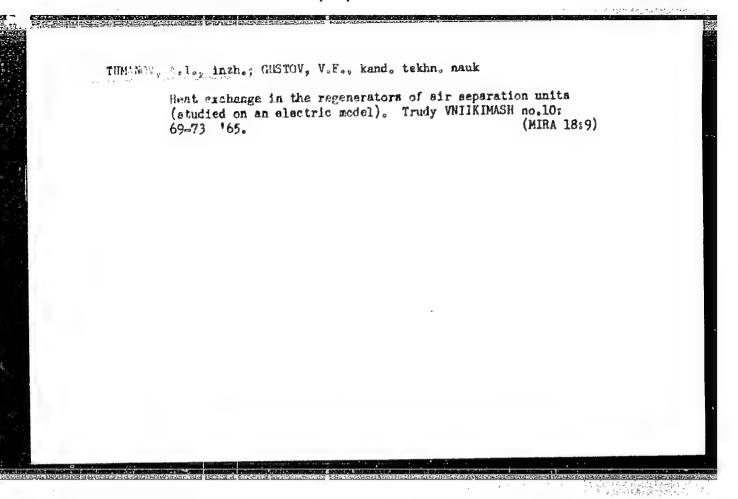
1. Chiskentskiy tsementnyy zavod.

High distance.

GAAB, M.T.; VARNAVSKIY, M.G.; TUMANOV, A.F.; SINYAKOV, V.N.; SONOMATOV, N.A.

Measures for maintaining pressure in petroleum strata. [Suggested by Gaab, M.T.; Varnavskiy, M.G.; Tumanov, A.F.; Sinyakov, V.N., Sonomatov, N.A.] Prom.energ. 12 no.10:22 0 '57. (MIRA 10:10) (011 field flooding)





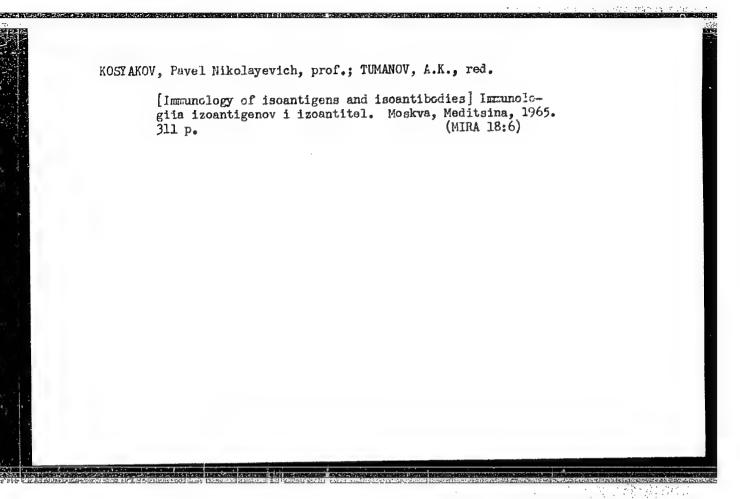
CHERNYSHEVA, Ye.A., inzh.; TUMANOV, A.1.

Investigating the work of regenerators packed with random crushed stone. Trudy VNIIKIMASH no.9:36-55 165.

(MIRA 18:6)

TUMANOV, A.I., inzh.; GUSTOV, V.F., kand. tekhn. nauk

Electric model of a regenerator. Trudy VNIIKIMASH nc.9:
151-162 *65. (MIRA 18:6)



TUMANOV, A. I.; GUSTOV, V. F.

"Investigation of the heat exchange in the regenerators of an air-fractionating plant by means of the heat-electric analogy."

report submitted for 2nd All-Union Conf on Heat & Mass Transfer, Minsk, 4-12 May 1964.

All-Union Sci Res Inst of Oxygen Engineering.

Lobors, L. D. Spectral and Filentum Lodustry Profine, C. A. Applicat Betallargical Figure	Lobova, L. D. Spectral and Titanium Industry		Minimaki, In. M. N. T. T.	Kotlors, A. T. Role of Factors Perforabloys	Enlinetty, Ta. H., A. 1 and H. A. Pergelidza, roffanium, and Titaniu	Amalysis of 15% and 757	Shapevich, A. B. Special and Varying Conter	Sweetituity, F. S. Spi	and V. S. Linds (res. 1	x Burstler, In. M. Yv. I Yugskin US Resilt- Cutting Steel	Mal'sary M. G., and in the first Transfer Tor gill and Mass of Sarples D. Schwerz, Th. M., g. ? **Education of the Street of a street of street of the Street of the Street of	Burntley, Th. H. Prot	Solution of University	A Zolotukhin, G. Ye. I ing Metallic Electrod	Alaekovekiy, Ya. H.	of an Alloy on the Degree	on the spectral as there are each time as a control of seals (ten) and (ten) and (ten) and (ten) and (ten) are the spectral inhorator of the arcticles as arithmetical of the articles as a control of the articles are as a control of the articles as a control of the articles are a co	WRFGG: This collect workers at cratter personnel orator personnel organizations, and collect workers.	Ide: Now Bertsawt:	Sponsoring Agency: L	Materialy 2 Ural'sho (Materials of the Lorek, 1958) Swert meried, 1,000.co	Ural'shops sovesheba
	Application of Spectral Analysis at the Severakly Mant	<u>Sobors, L. D. Spectral</u> Nethods of Analyzing Products of the Nagnesius and Filesius Industry	. Bugrins, and A. E. Tumanov, Spectral Analysis	Hole of Internal Standard in the Spectral Analysis of Hoys	Salinsky, Ta. H., A. B. Shayerich, F. V. Bugrins, N. L. Chekmento, and H. A. Perepelisian. Special Indysis of Perronichius, Per-rollemann, and Titanius Concentrate	Blayerich, A. B., H. A. Propilities, and N. A. Kohrins, Spectral Analysis of by and 75% Perrosilicon	<u>Shayerich, A. B. Spectral Analysis of Malticomponent Systems With a Eigh and Varying Content of Components</u>	Spectral Analysis of Oases Contained in Metals	Equaty, N. Y., S. 1. Exhirmally, C. Y. Kornishko, Y. P. Kornikos and V. E. Kirdeiten. Spectral Analysis of Steel With a Modernized FES-1 Listingsett	x Baravier, 'h. M. XV. I. Ustinom, and D. Is. Shajidine. Effect of Tungskin on the Results of the Special Analysis of High-Speed Cutting Steel	Mal'tery, M. 0., and K. L. Tatarry. Application of Contact Electric Spirit Transfer for Elizarating the Effect of Composition, Structure, and Mass of Sarples During the Spectral Analysis of Certain Alloys Thursvier, Th. N., O. T. Terricits. and V. J. Ustinora. Irrestiga- tion of the Effect of Structure on the Spectral Analysis Results of Structural Steel.	Barevier, Th. H. Problem of the Entry of the Probe Material Into the Emiliating Circui During the Spectral Analysis of Steel	Sobblor. 1, Y., O. I. Daru, and V. F. Shirobornki, Double Re- fraction of Uniarial Semiconductof Crystals	A Exiotabhis, G. Te. Investigation of Evaporation Kinetics of Oxidis- ing Metallic Electrodes of an Arc	_Some Distribution Characteristics of Particles	Investigation of the Interaction of the Components Degree of Inclustion of Atoms	on the spectral analysis of ferrous and conference metals and alloys, the spectral analysis, affirments, affirments and other materials used in inchastry. The material of the conference includes writing on the analysis of small (including the determination of guess), ferrouling, conference and light metals and alloys, pure colls matchs, etc. The present volume in intereded to discretizate the interest experience in vorting with spectral laboratories, and to report on the results of extentific research. The surface thanks it, in thickne and in. M. Burwher, Almost all of the articles are accompanied by references.	tion of articles is intended for sweety ferrous and nonferrous mathilurgical pi of the metal-working industry, geologic similar edentific research laboratori tion contains papers wead at the Second	Ason Bertahvich Shoyerich and Geynnity Partorich Shormynkor; Tech.	Sponsoring Agency: Ural'skly filial Akademii nauk SLER, Komissiya po spak- troskopii and Ural'skly dom tehbniki Villo,	Materialy 2 Tral'shago serenbehadys po spaktroshopii, Swardlovsk, 1958 g. Haterials of the Second Urals Conference on Spettroscopy, Esid in Sward- Lorsk, 1958) Swardlorsk, Metallumpitdak, 1959. 305 p. Errata ally in- serted. 1,000-copies printed.	soveshchaniye po spektroev

Photoelectric spectral analysis of slags produced in the manufacture of ferrochrome and ferrotungsten. Zav.lab. 26 no.12:1366-1368 160. (MIRA 13:12)

1. Chelyabinskiy zavod ferrosplavov. (Iron alloys--Spectra)

Exchange of experience. Zav.lab. 28 no.11:1333 '62.

Exchange of experience. Zav.lab. 28 no.11:1333 '62.

(MIRA 15:11)

1. Chelyabinskiy nauchno-issledovatel'skiy institut metallurgii.

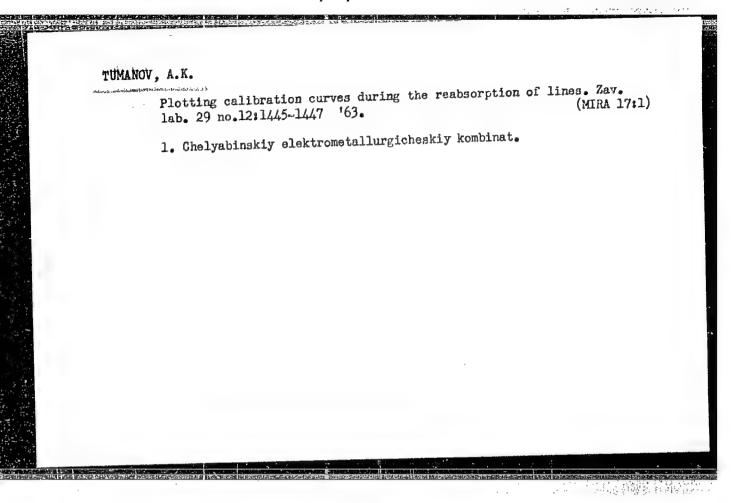
(Metals--Spectra)

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TUMANOV, A.K.; CHABANENKO, N.I.

Device for analysis of alloys by the method of thermoelectromotive force. Zav.lab. 29 no.5:627-628 '63. (MIRA 16:5)

1. Chelyabinskiy elektrometallurgicheskiy kombinat. (Alloys-Analysis) (Electromotive force)



TOPALOV, Leonid Ivanovich; SHAYEVICH, Aron Borisovich; SHUBINA, Sof'ya
Borisovas; TUMANOV, A.T., retsenzent; CHAPAYKINA, F.K., red.
izd-va; MAL'KOVA, N.I., teRmi. red.

[Spectrum analysis of ferroalloys]Spektral'nyi analiz ferrosplavov. Sverdlovsk, Metallurgizdat, 1962. 288 p. (MIRA 16:1)

(Iron alloys—Spectra)

VASIL'YEV, D.M.; TUMANOV, A.K.

Precision quartz dilatometer. Zav.lab. 25 no.3:374-375 '59.

(MIRA 12:4)

1. Leningradskiy politekhnicheskiy institut.

(Dilatometer)

S/032/60/026/010/013/035 B016/B054

AUTHOR:

Tumanov, A. K.

TITLE:

News in Brief

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 10, p. 1129

TEXT: The author reports on his electrical method of electrode polishing. The accurate shape of electrodes is of special importance to spectrum analyses by photoelectrical methods. The apparatus (Fig. p. 1129) consists of a rectifier, a porcelain or plastic vessel, an immobile lead electrode, and a holder for the electrodes to be polished. Any type of rectifier (12 - 24 v, 2 - 7 a) including the Cuprox rectifier BAK-13 28 (VAK-13) of the microphotometer MP-2 (MF-2) is suited for the purpose. The composition of the electrolyte and the working method are varied depending on the electrode material (see Table p. 1129). The stable electrodes are given the required shape on a turning lathe or by hand. The electrode is only electropolished after each exposure. It is inserted as an anode, its end being dipped into the electrolyte. When the traces

Card 1/2

News in Brief

S/032/60/026/010/013/035 B016/B054

of the spark have disappeared, the polishing is interrupted, and the electrode is rinsed with running water. The traces disappear within a few seconds, and the electrode surface becomes mirrorlike. 400 to 500 electrodes can be polished in 500 ml of electrolyte. The shape of the electrodes, ground as a conical frustum, does not change even after 150 - 300 analyses. Electrodes ground as hemispheres can be used for an unlimited period of time. Electropolishing speeds up the preparation of electrodes, reduces considerably the consumption of spectroscopically pure materials, and increases the stability of discharge as well as the reproducibility of analytical results. There are 1 figure and 1 table.

ASSOCIATION: Chelyabinskiy zavod ferrosplavov (Chelyabinsk Works of Ferroalloys)

Card 2/2

TUMANOV, A.K.

Medical jurisprudence in the German Democratic Republic. Sud.-med. ekspert. 3 no.4:31-34 O-D *60. (MIRA 13:11)

1. TSentral*naya sudebnomeditsinskaya laboratoriya Glavnogo voyennomeditsinskogo upravleniya Ministerstva oborony SSSR (nach. - chlenkorrespondent AMN SSSR prof. M.I.Avdeyev). (GERMANY, EAST--MEDICAL JURISPRUDENCE)

TUMANOV, Aleksey Konstantinovich; HEREZOVSKAYA, N.G., red.; LYAMINA,
Ye.Ya., red.; TARASOVA, N.M., tekim. red.

[Forensic medical examination of material evidence] Sudebnomeditsinskoe issledovanie veshchestvennykh dokazatel'stv. Moskva, Gos.izd-vo iurid.lit-ry, 1961. 579 p. (MIRA 15:2)

(MEDICAL JURISPRUDENCE)

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8(2)

SOV/32-25-3-51/62

AUTHORS:

Vasil'yev, D. M., Tumanov, A. K.

TITLE:

A Precision Quartz Dilatometer (Pretsizionnyy kvartsevyy

dilatometr)

PERIODICAL:

Zavodskaya Laboratoriya, 1959, Vol 25, Nr 3, pp 374-375 (USSR)

ABSTRACT:

The article is a description of a dilatometer using the pattern of a "roller" with an expansion coefficient of appr.

5.10⁴. The apparatus (Fig 1) consists of a base plate with two supports for the two working rods which are connected through quartz extension pieces and which hold the sample. The samples with the quartz extension pieces are contained in two quartz tubes attached to a clamping device. A third quartz tube contains a thermoelement. During the experiment the three quartz tubes are in a stove with a maximum temperature of 1200°. The sample deformation is measured with the help of a mirror mounted on an axis. The latter is attached to a clamp (Fig 2). With a sample length of 10 mm a relative length change can be determined by means of the apparatus described with an accuracy of 2.10⁻⁶; the accuracy of determining an absolute extension is 2.10⁻⁵ mm. There are 2 figures.

Card 1/2

A Precision Quartz Dilatometer

sov/32-25-3-51/62

ASSOCIATION: Leningradskiy politekhnicheskiy institut (Leningrad Polytechnical Institute)

Card 2/2

BRONNIKOVA, Mariya Aleksandrovna; GARKAVI, Anna Samoylovna; TUMANOV, A.K., red.; BEL'CHIKOVA, Yu.S., tekhn.red.

[Methodology and technique of forensic medicine expertise on material evidence] Metodika i tekhnika sudebnomeditsinskoi ekspertizy veshchestvennykh dokazatel'stv. Moskva, Medgiz, 1963. 277 p. (MIRA 17:2)



8/032/60/026/012/010/036 1 8020/8056

AUTHOR:

Tumanov, A. K.

TITE:

The Photoelectric Spectrum Analysis of Slage From the

Production of Ferrochromium and Perrotungsten

PERIODICAL:

Zavodekaya laboratoriya, 1960, Vol. 26, Ro. 12,

pp. 1366-1368

TEXT: The author developed a procedure for the photoelectric spectroscopic determination of chromium exide in ferrochromium slags and of tungsten trickide in ferrotungsten slags. A one-channel device, which had been constructed in the author's factory on the basis of the optics of the CA-3 (SL-3) styloscope was used (Fig. 1). The analytical bands were recorded by means of a PBY-19M (FEH-19M) photomultiplier in conjunction with a single-cascade tube electrometer. The relictechnical part of the device (Fig. 2) consists of a single-cascade tube electrometer connected in bridge circuit with tube 191M (181M). The input resistance of the electrometer exceeds 1012 ohms. The electrometer is fed by accumulators. The non-decomposed light incided upon a photocell of the type CLB-3

Card 1/2

The Photoelectric Spectrum Analysis of Slags | S/032/60/026/012/010/036 | From the Production of Ferrochromium and | B020/8056 | B020/8056

(STaV-3), and for the light of the analytical bands, a photoelectronic multiplier of the type FEU-19M was used. The device is stable and operator faultlessly. The instrumental error of the levice was less than 1%. As a light source, on a.c. are was used. The enclysis was carried out at 5.5 a by means of truncated cone electrodes made from carbon, with a dilution of 30 mm Hg in the arc zone, an exposure of 30 seconds and with an entrance slit of 0.03 mm. For W the analytical bands 4008.75 A and for chromium the green triplet 5208.44, 5206.04, and 5204.52 A was used. When carrying out the analysis one determination is sufficient, because, during the exposure, a large quantity of semples is burned, which warrants good concentration of the band intensity and of the non-decomposed light. The composition of the analyzed slags is given (Table). The error of individual determination of chromium exide in the ferrochromium slags is + 3.2%, and that of the tungsten trioxide in the forrotungaten slags is + 3.9%. The determination of one coll took 2 - 3 minutes. There are 2 figures, 1 table, and 2 Soviet references.

ASSOCIATION:

Chelyabinskiy zavod ferrosplavov

(Chelyabinsk Plant for Ferro Alloys)

Card 2/2

Magnetic method of determining chromium in ferrochromium. Zav.lab. 27 no.8:998-999 *61. (MIRA 14:7) 1. Chelyabinskiy elektrometallurgicheskiy kombinat. (Chromium-Analysis) (Iron-chromium alloys-Magnetic properties)

SOV/137-58-11-23151

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 11, p 188 (USSR)

AUTHORS: Golubev, A. I., Tumanov, A. N., Filippova, A. P.

TITLE: Behavior of the Structural Components of Aluminum Alloys During

the Process of Chemical and Anodic Staining in Sulfuric Acid (Povedeniye strukturnykh sostavlyayushchikh alyuminiyevykh splavov v protsesse khimicheskogo oksidirovaniya i anodirovaniya

v sernoy kislote)

PERIODICAL: V sb.: Korroziya i zashchita metallov. Moscow, Oborongiz,

1957, pp 328-341

ABSTRACT: The behavior of various structural components of cast Al alloys

during anodic (A) and chemical (C) staining was investigated. A was continued for 40 min in H₂SO₄ of 200 g/liter concentration at 18°C and a cathode cd of 0.6-1 amp/dm². It was found that alloys cast under pressure are anodized at a higher voltage than chill-cast alloys. C was conducted in a solution containing (in g/liter):

CrO₂ 3 and N₂₂SiF₄ 3 at 18-20° during 10 min. Before the C and A

CrO₃ 3 and Na₂SiF₆ 3 at 18-20° during 10 min. Before the C and A a part of the surface of the alloy was etched in a 0.5% HF solution.

Card 1/2 Successive metallographic analysis of the specimens after etching,

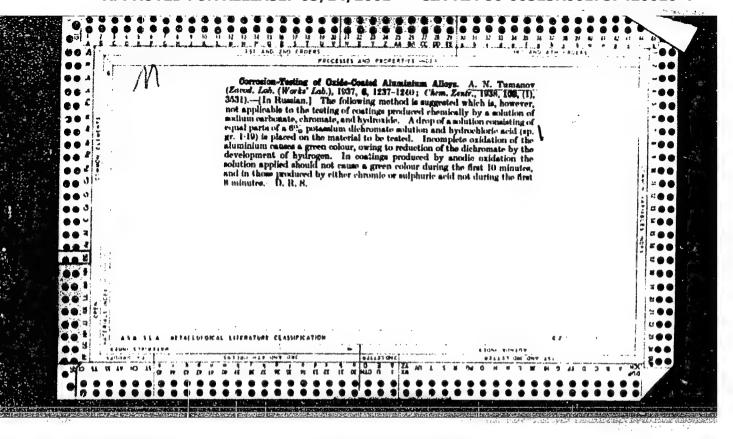
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SOV/137-58-11-23151

Behavior of the Structural Components of Aluminum Alloys (cont.)

C, and A made it possible to establish that in case of a greater Cu content (4.15%) the alloy consists of a solid solution and the chemical compound CuAl₂. During A a film forms only on the surface of the solid solution. The chemical compound is etched away. Upon investigation of alloys containing an appreciable amount of Si it was established that the anodic film is then also formed on the surface of the solid solution only. The surface of Si crystals remains unchanged. Upon either chemical or electrochemical treatment of alloys no discernible oxide film could be discovered on the surface of the Si crystals. Addition of up to 10.46 Zn to Si alloys shows no appreciable effect on the behavior of the alloy during A and C. Alloys containing Mg have, along with the solid solution, an Mg₂Si component which is completely dis solved during the A of the alloy.

Card 2/2



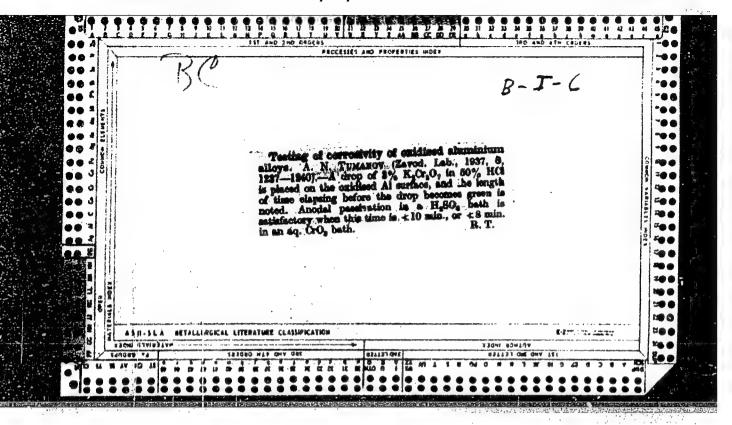
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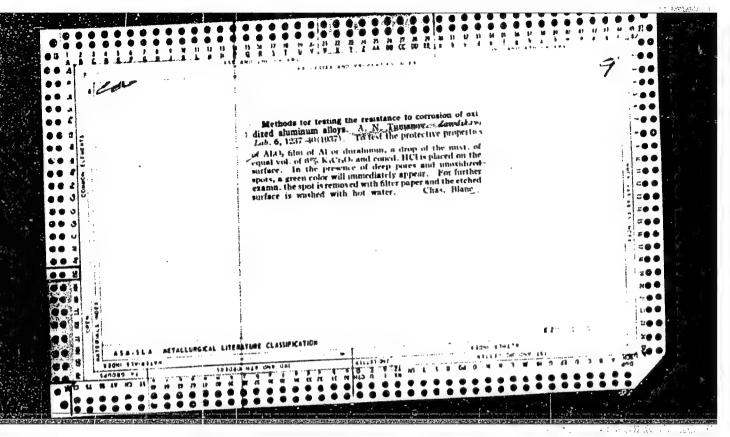
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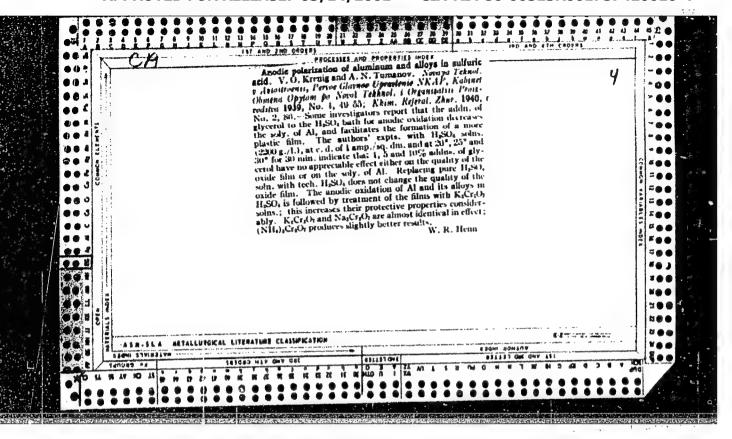
TUMANOV, A. N.; FILIPPOVA, A. P.; GOLUBEV, A. I.;

"Behavior of Structural Components of Aluminum Alloys in the Process of Chemical Oxidation and Anodizing in Sulphuric Acid," Korroziya i azshchita metallov (Corrosion and protection of Metals), Moscow, Oborongiz, 1957. 366 p.

PURPOSE: This book is intended for engineering, technical, and scientific personnel, at industrial plants, research institutes, and design offices working in the field of corrosion-protection of stainless steel, high-strength structural steel, and light alloys.

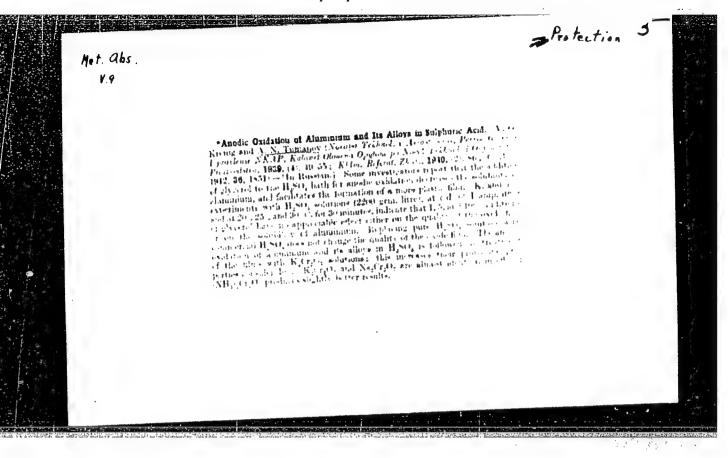






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KOPYTOV, V.F., otv. red.; DAVYDOV, G.M., kand. ekon. nauk, red.; KLIMENKO, V.Ya., kand.geol.-miner. nauk, red.; COREV, N.A., inzh., red.; GORODETSKIY, V.I., inzh., red.; LYASOVSKIY, ll.F., inzh., red.; TUMANOV, A.P., inzh., red.; STUKALOV, K.V., inzh., red.; TITOVA, N.M., red. izd-va; CHUMACHENKO, V.S., red.izd-va; LIBERMAN, T.R., tekhn. red.

[Development of the Ukrainian gas industry]Razvitie gazovoi promyshlennosti Ukrainy. Kiev, Izd-vo Akad. nauk USSR, 1962. 274 p. (MIRA 15:11)

1. Akademiya nauk URSR, Kiev. Rada po vyvchenniu produktyvnykh syl URSR. 2. Chlen-korrespondent Akademii nauk Ukr. SSR i Institut ispol'zovaniya gaza Akademii nauk Ukr. SSR (for Kopytov). 3. Sovet po izucheniyu proizvoditel'nykh sil Ukr. SSR (for Davydov). 4. Institut geologicheskikh nauk Akademii nauk SSR (for Klimenko). 5. Ukrainskoye otdeleniye Gosudarstvennogo instituta po proyektirovaniyu zavodov iskusstvennogo zhidkogo topliva i gaza. (for Gorodetskiy). 6. Gosudarstvennyy planovyy komitet Soveta Ministrov SSSR (for Gorev, Lyasovskiy).

(Ukraine-Gas, Natural)

TUMANOV, A.T., plav. red.; VYATKIN, A.Ye., red.; GARBAR.M.I., kand.

tekin. mauk, red.; ZAYMOVSKIY, A.S., red.; KARGIN, V.A.,

red.; KISHKIN, S.T., red.; KISHKINA-RATNER, S.I., doktor

tekhn. mauk, red.; PANSHIN, B.I., kand. tekhn. nauk, red.;

ROGOVIN, Z.A., doktor khoz. mauk, red.; SAZHIN, N.P., red.;

SKIYAROV, N.M., doktor tekhn.nauk, red.; FRIDLYANDER, I.N.,

doktor tekhn. mauk, red.; SHUBNIKOV, A.V., red.; SHCHERBINA,

V.V., doktor geol.-miner. nauk, red.; SHRAYBER, D.S., kadn.

tekhn.nauk, red.; GENEL', S.V., kand. tekhn.nauk, red.;

NOVIKOV, A.S., doktor khoz. nauk, red.; KITAYGORODSKIY, I.I.,

doktor tekhn. nauk, red.; ZHEREBKOV, S.K., kand. tekhn. nauk,

red.; BOGATYREV, P.M., kand. tekhn. nauk, red.; BUROV, S.V.,

kand. tekhn. nauk, red.; POTAK, Ya.M., doktor tekhn. nauk,

red.; KUKIN, G.N., doktor tekhn. nauk, red.; KOVALEV, A.I.,

kand. tekhn. nauk, red.; ZENTSEL'SKAYA, Ch.A., tekhn. red.

[Building materials; an encyclopedia of modern technology]
Konstruktsionnye materialy; entsiklopediia sovremennoi tekhniki. Glav. red. Tumanov, A.A. Moskva, Sovetskaia entsiklopediia. Vol.1. Abliatsiia - Korroziia. 1963. 416 p.

(MIRA 17:2)

1. Chlen-korrespondent AN SSSR (for Kishkin).

 TUMANOV, A.T., glav. red.; VYATKIN, A.Ye., red.; GARBAR, M.I., red.; ZAYMOVSKIY, A.S., red.; KARGIN, V.A., red.; KISHKIN, S.T., red.; KISHKINA-KATHER, S.I., doktor tekhn. nauk, red.; PANSHIN, B.I., kand. tekbn. nauk, red.; ROGOVIN, Z.A., red.; SAZHIN, N.P., red.; SKLYAROV, N.M., doktor tekhn. nauk, red.; FRIDLY ANDER, I.N., doktor tekhn. nauk, red.; SHURNIKOV, A.V., red.; SHCHERBINA, V.V., doktor geol.-miner. nauk, red.; SHRAYHER, D.S., kand. tekhn. nauk, red.; GENEL', S.V., kand. tekhn. nauk, red.; VINOGRADOV, G.V., doktor khoz. nauk, red.; NOVIKOV, A.S., doktor khoz. nauk, red.; KITAYGORODSKIY, I.I., doktor tekhn. nauk, red.; ZHEREBKOV,S.K., kand. tekhn. nauk, red.; BOGATYREV, P.M., kand. tekhn. nauk, red.; SANDOMIRSKIY, D.M., D.M., kert. tekhn. nauk, red.; BUROV, S.V., kand. tekhn. nauk, red.; FOTAK, Ya.M., doktor tekhn.nauk, red.; KUKIN, G.N., doktor tekhn. nauk, red.; KOVALEV, A.I., kand.tekhn. nauk, red.; YAMANOV, S.A., kard. tekhn. nauk, red.; SHEFTEL', I.A., kand. khoz. nauk, st. nauchn. red.; BABERTSYAN, A.S., inzh., nauchm. red.; ERAZHIIKOVA, Z.I., nauchm. red.; KALININA, Ye.M., mlad. red.; SOKOLOVA, V.G., red.-bibliograf; ZENTSEL'SKAYA, Ch.A., tekhn. red.

[Building materials; an encyclopedia of modern technology] Konstruktsionnye materialy; entsiklopediia sovremennoi tekhniki. Glav. red. A.T.Tumanov. Moskva, Sovetskaia entsiklopediia. Vol.1. Abliatsiia - korroziia. 1963. 416 p. (MIRA 17:3)

1. Chlen-korrespondent AN SSSR (for Kishkin).

TUMANOV, A.T., zusluzhennyy deyatel nauki i tekhniki RSFSR;

DAVIDENKCV, V.V., akademik; SERENSEN, S.V., akademik;

KURDYUMCV, G.V., akademik; BCCHVAR, A.A., akademik;

KISHKIN, S.T.; ZAYMCVSKIY, A.S.; SHCHAPCV, N.P., prof.;

KUDRYAVTSEV, I.V., prof.; VITMAN, F.F., prof.; KISHKINA,

S.I., prof.

IAkov Borisovich Fridman; on the fiftieth anniversary of his birth. Zav.lab. 27 no.7:919-920 '61. (MIRA 14:7)

1. Akademiya nauk USSR (for Davidenkov. Serensen). 2. Chlenykorrespondenty Akademii nauk SSSR (for Kishkin, Zaymovskiy). (Fridman, IAkov Borisovich, 1911-)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757420010-4"

AL'TMAN, Marter Borisovich; LEBEDEV, Aleksandr Aleksandrovich;
CHUKHROV, Matvey Vasil'yevich; TUMANOV, A.T., sasil deystel
nauki i tekhniki RSFSR, doktor Tekhn. nauk, red.; KAMAYEVA,
O.M., red.izd-va; VAYNSHTEYN, Ye.B., tekhn. red.

[Melting and founding nonferrous metal alloys; metallurgical
principles] Plavka i lit'e splavov tsvetnykh metallov; metallurgicheskie osnovy. Pod red. A.T.Tumanova. Moskva, Metallurgizdat, 1963. 523 p.

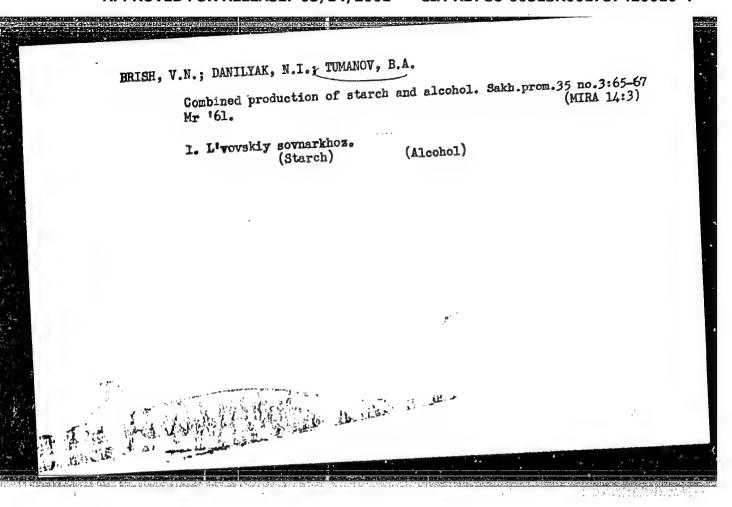
(MIRA 16:5)

(Nonferrous metals—Founding)

BRISH, V.N.; DANILYAK, N.I.; TUMANOV, B.A.

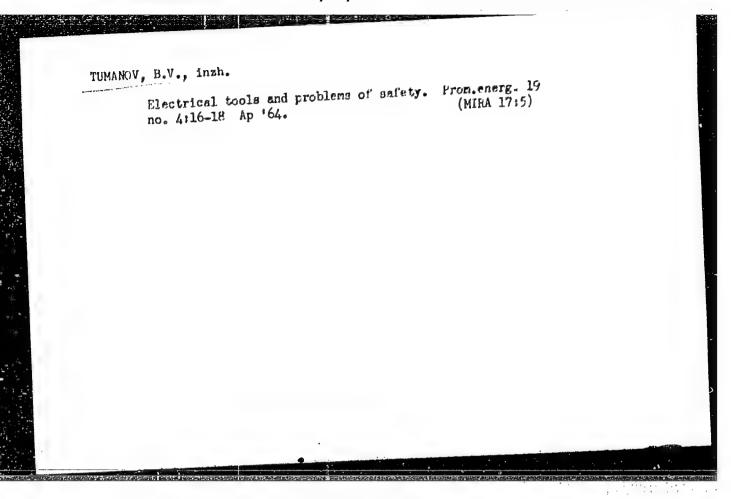
Combined porudction of starch and alcohol. Spirt.pron. 26 no.8: 29-32 '60. (MIRA 13:11)

(Starch) (Alcohol)



TUMANOV, Boris Vladimirovich; DOLIN, P.A., red.; VORONIN, K.P.,
tekhn.red.

[Safety information for electric welders] Pamiatka po tekhnike
bezopasrosti dlia elektrosvarshchikov. Moakva, Gos.energ.izd-vo,
1960. 19 p.
(Electric welding—Safety measures)



SEVAST'YANOV, Mitrofan Ivanovich; VASIL'YEV, A.A., red.; DOLGOV, A.N., red.; YEZHKOV, V.V., red.; SMIRHOV, A.D., red.; USTINOV, P.I., red.; TUMANOV, B.V., red.; VORONIH, K.P., tekhn.red.

[Safety engineering in performing rigging operations in the installation of electric systems] Tekhnika bezopasnosti pri installation of electric systems] Tekhnika bezopasnosti pri proizvodstve takelazhnykh rabot na montazhe energeticheskikh proizvodstve takelazhnykh rabot na montazhe energeticheskikh ustanovok. Moskva, Gos.energ.izd-vo, 1960. 55 p. (Biblioteka ustanovok. no.34)

(Electric engineering--Safety measures)

TUMANOV, E. A.

"Quantum electrodynamics in a configurational representation V Two-photon annihilation of positronium." (p. 385)

SO: ZHURNAL EKSPERIMENTALNOI I TEORETICHESKOI FIZIKI 1953 Vol. 25 No. 4 (10)

TUMANOU, G.

USSR / Cultivated Plants. Plants for Technical Use. Oil Plants. Sugar Plants.

M

Abs Jour

: Ref Zhur - Biol., No 8, 1958, No 34739

Authors

: Tumanov, G.; Antokhina, V. : Not given

Inst

Title

: Concerning the Incorrect Quality Rating of Variety 2421

Orig Pub

: Khlopkovodstvo, 1957, No 6, 38-40

Abstract : No abstract given.

Card 1/1

Tomurou, 6

USSR / Cultivated Plants. Technical. Oleaginous. Sugar-Bearing L-5

Abs Jour : Ref Zhur - Biol., No 6, March 1957, No 22776

Author : Tumanov, G.

Inst : Not given

Title : Proper Distribution of Cotton Plant Varieties in Azer-

baydzhan.

Orig Pub : Khlopkovodstvo, 1955, No 5, 27-30

Abstract : Unreasonably large areas in Azerbaydzhan SSR are occu-

pied by the cotton plant variety 1298, and the development of variety 108-F is delayed. The data of the state variety tests, and comparisons of production within the limits of individual rayons and kolkhozes prove the superiority of Variety 108-F over variety 1298 in the ma-

Card : 1/2

USSR / Cultivated Plants. Technical. Oleaginous. Sugar-Bearing.

L-5

Abs Jour

: Ref Zhur - Biol., No 6, March 1957, No 22776

Abstract

majority of Azerbaydzhan cotton-producing rayons. The reference to the fact that on the whole variety 1298 yielded a larger crop than 108-F in the Republic in 1954 proves nothing since it is based on comparison of unlike data. It is also incorrect to delay production of variety 108-F for the reason that new varieties were developed by the scientific-experimental cotton institute of Azerbaydzhan (2018/2, 2421 and 2173). According to data of state variety tests, these varieties yield to variety 108-F in many Azerbaydzhan rayons. In the author's opinion, variety 108-F should be correctly dispersed through rayons, and a productive check-up on the new varieties should be widely practiced by comparison with varieties assigned to rayons.

Card

: 2/2

TUMANOV, G., gornyy inzh.; KHAZARYAN, L., gornyy inzh.

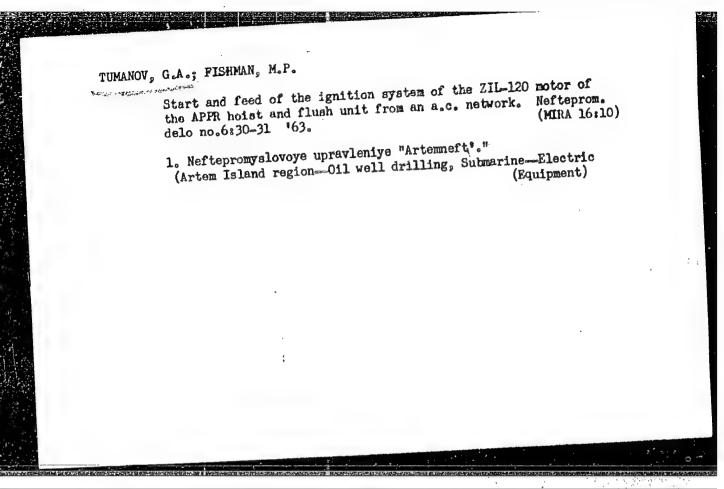
New equipment and technological processes in blasthole drilling at the lime quarries of the Ararat Cement and Slate Works. Prom.Arm. 6 no.7:33-38 Jl '63. (MIRA 16:9)

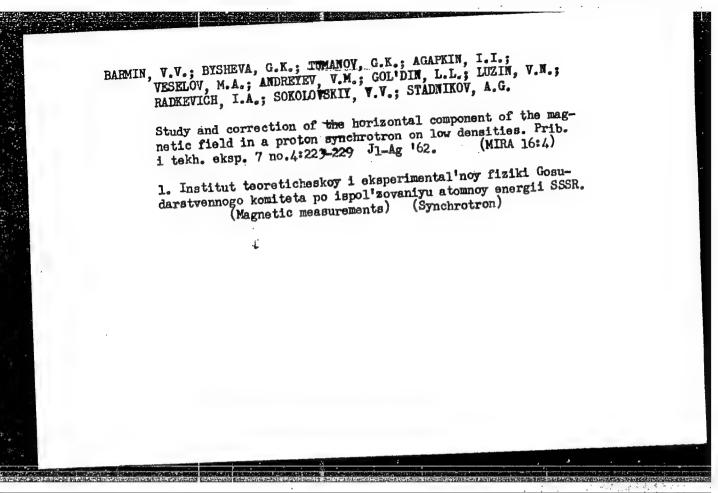
l. Armyanskoye spetsial noye upravleniye po proizvodstvu burovzryvnykh rabot.

TUMANOV, G., inzh.; KHAZARYAN, L., inzh.

Using blasting techniques in recovering building tuffs. Prom. Arm. 6 no.1:50-53 Ja *63. (MIRA 16:4)

1. Armspetsupravleniye po proizvodstvu burovzryvnykh rabot. (Armenia—Volcanic ash, tuff, etc.)





1,0761

S/120/62/000/004/042/047 E140/E420

AUTHORS:

Barmin, V.V., Bysheva, G.K., Tumanov, G.K., Agapkin, I.I., Andreyev, V.N., Veselov, M.A., Gol'din, L.L., Luzin, V.N., Radkevich, I.A., Sokolovskiy, V.V., Stadnikov, A.G.

TITLE:

Investigation and correction of the horizontal component of the low-induction magnetic field of the

proton synchrotron

PERIODICAL: Pribory i tekhnika eksperimenta, no.4, 1962, 223-229

Permalloy probes modulated at 10 kcs were used to measure the position of the neutral plane of the magnetic field, found that the distortion of the neutral plane in the residual This distortion field was determined mainly by the neutral pole. decreased as the excitation of the C-blocks was increased. Due to hysteresis effects, the measurements had to be carried out under operating conditions. A description of the probe and its associated circuits is given. The measurements show that 67 of the magnets have a deviation of the neutral plane in the range + 0.5 mm, 16 magnets have 0.5 to 0.6 mm, 3 magnets 0.6 to 0.7 mm Card 1/2.

S/120/62/000/004/042/047 E140/E420

Investigation and correction ...

and 12 magnets \geqslant 0.7 mm. The average error of measurement is \pm 0.17 mm. The method of correcting the neutral plane errors by means of windings on the neutral poles is described. There are 11 figures.

ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki

GKAE (Institute of Theoretical and Experimental

Physics GKAE)

SUBMITTED: April 11, 1962

Card 2/2

. •	14438-66 EWT(m)/T IJP(c) SOURCE CODE: UR/3138/65/000/362/0001/0012
700	HR: AT6002500
AU H.	THOR: Birger, N. G.; Borisov, V. S.; Bysheva, G. K.; Gol'din, L. L.; Korotkov, M.; Hartusov, Ye. T.; Sidorenko, Z. S.; Tumanov, G. K.
OR	G: none
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	L. ALMAN OF THE INSLITUTE OF
SC te	17, 5 DURCE: USSR. Gosudarstvennyy komitet po ispol'zovaniyu atomnoy energii. Institut DURCE: USSR. Gosudarstvennyy komitet po ispol'zovaniyu atomnoy energii. Institut Boreticheskoy i eksperimental'noy fiziki. Doklady, no. 362, 1965. Izmereniye za- Bisimosti impul'sa protonov sinkhrotrona ITEF ot vremeni uskoreniya, 1-12
-	OPIC TAGS: proton beam, synchrotron, particle physics
Ai	BSTRACT: A beam of particles emitted at an angle of 0.222 rad to the direction of a necident proton was analyzed by an SP-12 magnet located 13 m from a polyethylene arget. Positively charged particles deflected by this magnet at an angle of 0.262 arget. The detector count rate was measured as a function of ad reached the detector. The detector count rate was measured as a basis for agnet current. The energy of elastically scattered protons was used as a basis for agnet current. The measurements were made at four different time intervals
1	ard 1/2

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from the beginning of the acceleration cycle. The following table gives the results of these measurements

Results of measurements of proton momentum P as a function of acceleration time

in sec	$P(1*\delta P/P)^d$ in bev/c
0.404	2.20 (1 * 0.006)
0.408	2.25 (1 ± 0.006)
0.813	4.45 (1 * 0.006)
0.817	4.49 (1 * 0.006)
1.176	6.35 (1 * 0.006)
1,420	7.64 (1 * 0.009)

where δP is the relative error in momentum determination. The experimental errors

are analyzed and the following formula is given for proton momentum as a function of acceleration time: P = 0.08 + 5.34 t. Orig. art. has: 6 figures, 1 table, 1 formula.

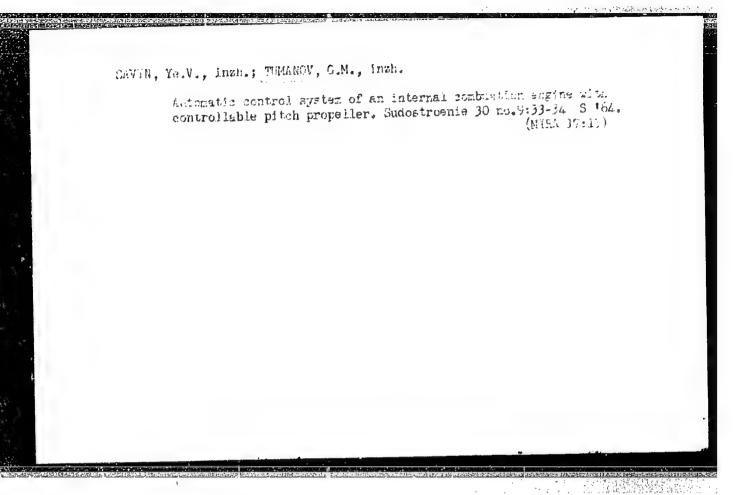
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SUBH DATE: 21Jun65/

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Card 2/2



على بينك بنك بنك المرادر المرادر الم Para espain is the Mercy of the Residence, to the The second term of the second term of the explosions INFI IIDAL: Lkademiya nauk Armyanskoy SSR. Izvestiya. Seriya tekhnicheskokh nauk, vol XVI, no 1, 1963, 21-27 TEXT: A group of scientific workers and designers from the Institut geofiziki i inchenerncy seysmologii Akademii nauk Armyanskoy SSR (Institute of Geophysics and Engineering Seismology, AS, Armenian SSR) and the Institut fiziki Zemli Akademii of the disconsists of the Alberta sensementar. The Alberta has been sensementary spherical pendicus in recoming northwhile insulations and 3 continues colarized pendulums for recording vertical displacements. The vertical pendulums had free oscillation periods of 0.8, 0.10, 0.15, 0.20, 0.30, 0.40, 0.60, 0.80, and 1.20 Took to the part a much sendulums 0.08, 0.15, and 0.30 seconds. All pendulums were The living damping and the second second second and all and the test of the security returns and take were also obvained on the effect of secular waves in what continue and struct tures and on seigmically safe unchanges from explosions. The explosions used as sources of seismic waves were 123-kg charges distributed in 4 holes 3.5 to 3.8 Card 1 of 2

5/173/63/016/001/001/001

Experience in using

meters deep. The safe distance was 15 m in the studied area consisting of a block basalt structure with interlayers of belozem. The results were given in a second table with explosions of 2.5 kg in 10 holes at a distance of $25 \, \text{m}$, $1.3 \, \text{kg}$ in 4 holes at a distance of $25 \, \text{m}$ and $1.7 \, \text{kg}$ in 4 holes at a distance

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and mailtain,, who persure adoptersoin was (a W/V ot/sec).

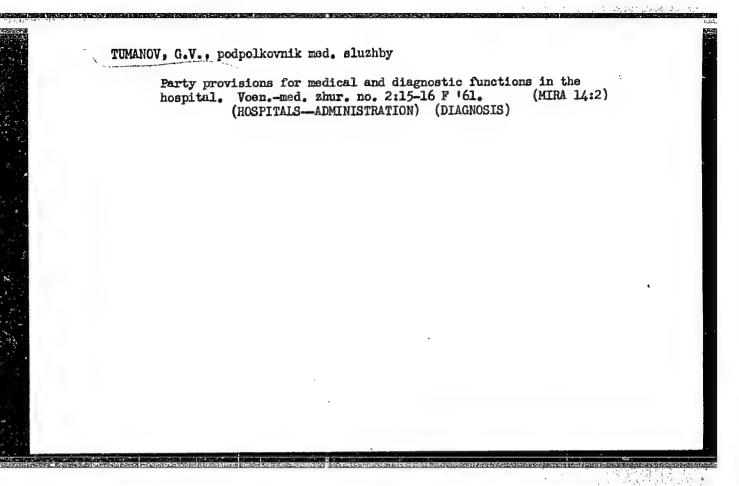
ApiDDTATITU: Anstatut Feofiziki i inzhermoy seysmologni a , Ar SSR Institute of Segovysios and Engineering Delsmology, AS, Ar I

Card 2 of 2

KARAPETYAN, B.K.; MAROYAN, G.A.; TUMANOV, G.S.

Use of AIS-2M seismometers in studying explosions. Izv. AN Arm. SSR. Ser. tekh. nauk 16 no.1:21-27 '63. (MIRA 16:6)

1. Institut geofiziki i inzhenernoy seysmologii AN Armyanskoy SSR. (Explosions) (Seismometry)



TUMATOV, G.V., podpolkovník meditsinskoy sluzhby

Effectiveness of lytic cocktails in the treatment of traumatic shock; experimental investigation. Voen.-med.zhur. no.8:69-71 Ag 159.

(MIRA 12:12)

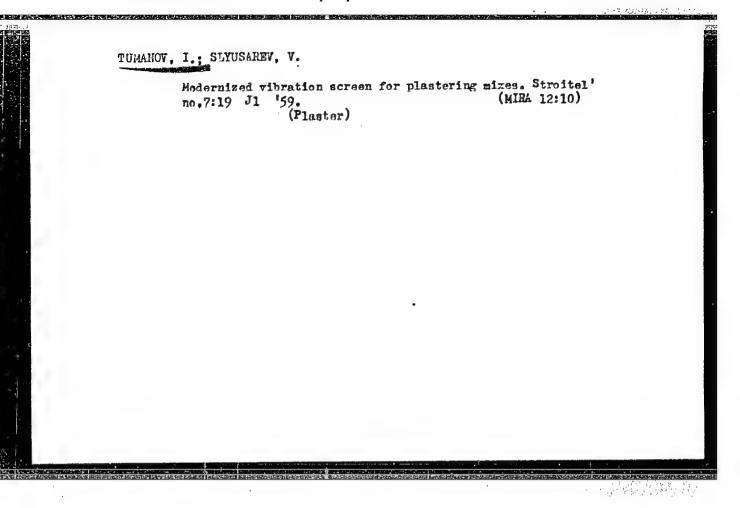
(SHOCK ther.)
(HIBERNATION ARTIFICIAL)

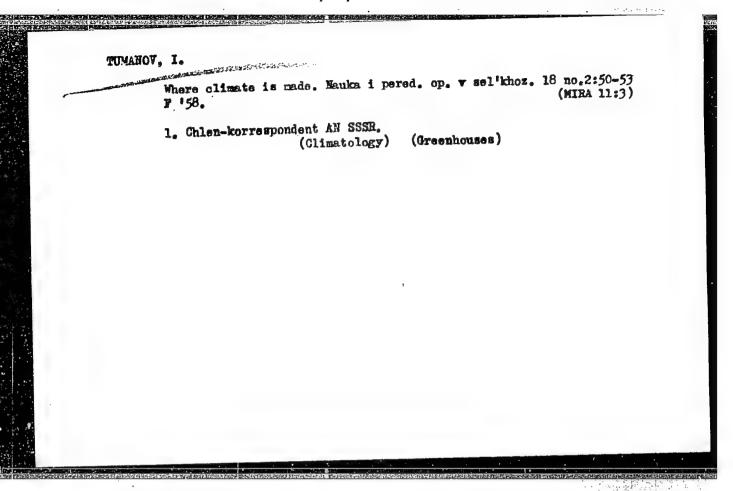
APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757420010-4"

TUMANOV, G.V., podpolkovnik meditsinskoy sluzhby; KATERINICH, N.T.,
podpolkovnik meditsinskoy sluzhby, kand, med.nauk; EAKANIDZE, I.C.,
podpolkovnik meditsinskoy sluzhby; SOBOLEV, Ye.I., podpolkovnik
meditsinskoy sluzhby; LOMTEVA, ye.V.

Treatment of acute radiation sickness with homoplastic bone
marrow. Voen:med.zhur. no.9:21-22 S '61. (MIRA 15:10)

(RADIATION SICKNESS) (MARROW--TRANSPLANTATION)





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TURANOV, I. F. -- "Nature of the Colloids of Hydrolysis Froducts of Lunder and Nethods of their Elimination." *(Dissertations for Degrees in Science and Engineering Economic at Sub. Egler Educational Engineering Economic at Sub. Egler Education Established Institute of Education USER, Lendagrad Crear of Lonin Forestry Acad Frank J. H. Kirev. Loningrad, 1955

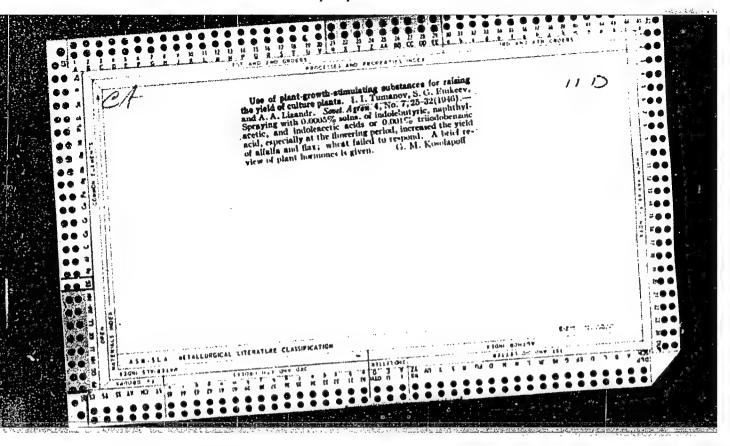
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* For Degree of Doctor of Technical Sciences

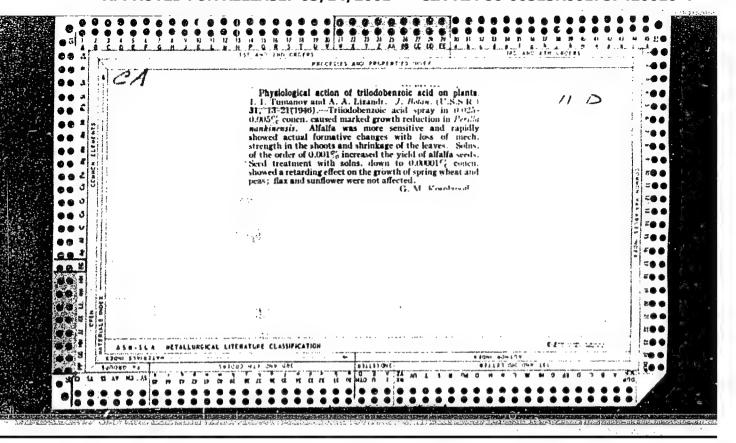
CHEPELEVSKIY, Vladimir Natanovich; TUMANOV, Ivan Aleksevevich; SARKHOSH'YAN, Gurgen Nikitovich; RUMYANTSEV, Aleksey Nikolayevich; KLEVENSKIY, Aleksandr Iosifovich; EELOTSERKOVSKAYA, S.I., red.; SHUPIYAKOV,S.I., red.

[New developments in the technology and equipment used in motor-vehicle repair] Novoe v tekhnologii i oborudo-vanii dlia romonta avtomobilei. Moskva, Transport, 1964. 127 p. (MIRA 18:1)

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TUMANOV, IVAN. I.

Geography & Geoglogy

Requirements of industry as to the quality of mineral raw materials. Handbook for geoglogists--Moskva, G os. Izd-vo geoglogicheskoi lit-ry Komiteta po delam geologii pri SNK SSSR, No 21, Diatomite, tripoli, mar, 1947.

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TUMANOV, Ivan I. 1094-

The principal achievements of Soviet science in the study of frost resistance in plants. Moskva, Akademiia mauk SSSR, 1951. 53 p. (Akademiia nauk SSR. Timirazevskie chteniia, 11)

DA

1. Plants - Effect of temperature on. 2. Cold - Physiological effect.

TUMANOV, I. I., GAPEYEV, YE. Z.

Fruit Culture

Influence of fruit-bearing organs in a maternal plant. Trudy Inst. Fiziol. rast., 7, No. 2, 1951.

9. Monthly List of Russian Accessions, Library of Congress, March 1953, Unclassified.

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- 1. TUMANOV, I. I.
- (600) USSR
- 4. Citrus Fruits
- Physiology of winterhardiness of citrus plants. Izv.AN SSSR Ser.biol. no.5,

1953, Unclassified. 9. Monthly List of Russian Accessions, Library of Congress, January

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TUMANOV, I. I.

Botany - Physiology

On L. I. Sergeev's article "Michurin doctrine should be incorporated into plant physiology." Sel i sem. 19 No. 2, 1952

Monthly List of Russian Accessions, Library of Congress, June 1952. Unclassified

GENKEL', P.A.; OKNINA, Ye.Z.; TUMANOV, I.I., otvetstvennyy redaktor; AVLUSINA, Ye.I., redaktor; POLYAKOVA, T.V., tekhnicheskiy redaktor.

[Determining frost resistance in plants according to depth of dormancy in tissues and cells; methodological instructions]
Diagnostika morozoustoichivosti rastenii po glubine pokoia ikh tkanei i Yletok (Metodicheskie ukazaniia). Moskva, Izd-vo Akad. nsnk SSSR, 1954. 34 p.

(MERA 8:2)

1. Chlen-korrespondent AN SSSR. (for Tumanov)
(Plants--Frost resistance)

 TUMANOV, I.I

523

Zashchita tsitrusovykh. ot morozov. M., izd-vo Akad. nauk. SSSR. 1954. 95 s. s ill 19 sm. (Akad. nauk SSSR Nauch. - popul. seriya "V pomoshch! Sel! skomu khozyaystvu"). 4.000 ekz. lr. 60k. ----bibliogr: s. 92-93. -- [54-54412] p 634.3: 632.111: 634.3+ [016.3]

SO: Knizhnaya Letopis, Vol. 1, 1955

TUMANOV, I.I.; VINOKUR, R.L.

Effect of soil temperature on the growth and wintering of lemon trees. Fiziol.rast. 1 no.1:21-36 S-0 154. (MIRA 8:10)

1. Institut fisiologii rasteniy imeni K.A.Timiryazeva Akad.nauk SSSR, Moscow.

(Soil temperature) (Lemon)

TUMANOV, Iyan Iyangvich; SHIK,M.H., redaktor; ISLENT'YEVA,P.G., tekhnicheskiy redaktor

[Losses of plants due to cold weather and measures to prevent them] Prichiny gibeli rastenii v kholodnoe vrenia goda i mery ee preduprezhdeniia. Moskva, Izd-vo "Znanie," 1955. 39 p. (Vsesoiuznoe obshchestvo po rasprostraneniiu politicheskikh i nauchnykh znanii. Ser. 3, no.56) (MLRA 8:12)

1. Chlen-korrespondent AN SSSR (for Tumanov).

(Plants, Effect of temperature on)

TUMANOV, I. I.

Vegetative and winter hardy states in plants. Fiziol.rast. 2 no.3: 283-292 My-Je '55. (MLRA 8:11)

1. Institut fiziologii rasteniy imeni K.A.Timiryazeva Akademii nauk SSSR, Moscow.

(Growth (Plants)) (Plants--Frost resistance)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757420010-4"

TUMANOV, 1.1.; KRASAVTSEV, O.A.

Frost resistance of woody plants. Fiziol.rast.2 no.4:320-333 Jl-Ag'55. (MIRA 8:12)

1. Institut fiziologii rasteniy imeni K.A.Timiryazeva Akademii nauk SSSR, Moscow

(Plants--Frost resistance)

TUMANOV, I.I.; SMIRNOV. N.S.

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Emergency winter heating of a lemon plantation with flameless fuel and smoke of red phosphorus. frudy Inst. fixiol. rast. 9:288-323 155. (MIRA 8:8)

l. Institut fiziologii rasteniy im. K.A.Timiryaseva Akademii nauk SSSR i Geofizicheskiy institut Akademii nauk SSSR. (Frost) (Lemon)

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USSR/ Biol	egy - Botany
Card 1/1	Fub. 1:5 - 3/39
Authors	* Tumanov, I. I., Mem. Corresp., Acad. Sc., USSR
Title	On the physiological bases of resistance to winter conditions on the part of plants
Pariodical	To Produce the Committee of the Committe
Abstract	4 An account to often of the control of the series of the
Institution	-1414
Submittel	••••

XURSAHOV, A.L., akademik, otvetstvennyy redaktor; TUMANOV, I.L., otvetstvennyy redaktor; GENKEL', P.A., professor, otvetstvennyy redaktor; BRITIKOV, Ye.A., redaktor izdatel'stva; ZELENKOVA, Ye.V., tekhnicheskiy redaktor

[In memory of Academician N.A.Maksimov; a collection of articles]
Pamiati akademika H.A.Maksimova; sbornik statei. Moskva, 1957.

323 p. (MIRA 15:10)

1. Chlen-korrespondent Akademii nauk SSSR (for Tumanov)

(Botany--Physiology)

TUMANOV, I.I.

Plants in winter; talk with I.I. Tumanov, corresponding member of the Academy of Sciences of the U.S.S.R. IUn. nat. no.2:24-25 1 57.

(MLRA 10:6)

1. Chlen-korrespondent Akademii nauk SSSR.
(Plants--Frost resistance)

USSR/Plant Physiology - Heat Cycle.

T.

Abs Jour

: Ref Zhur - Biol., No 21, 1958, 95659

Author

: Tunnov, I.I., Trunova, Til.

Inst

Title

: Hardening of Tissues in Winter Plants by Means of Sugars

Absorbed from an External Solution.

Orig Pub

: Fiziol: rasteniy, 1957, 4, No 5, 397-408

Abstract

5 mm of a section of colcoptiles of grains, isolated from 3-day germinations, were threaded in glass needles, placed in moist chambers, and put into a refrigerator with the temperature somewhat over 60, where they passed through the first phase of hardening. For the second phase, the needles with the colcoptiles were placed for 3 days on dry filter paper in a refrigeration cabinet with the temperature from -3 to -40. Then the temperature was decreased as desired; in the following days part of the material was removed, the temperature decreased

Card 1/3

USSR/Plant Physiology - Heat Cycle.

I.

Abs Jour : Ref Zhur - Biol., No 21, 1958, 95659

anew etc. After thawing for 4-5 hours at 00, the coleoptiles were placed in an incubator in a moist chamber on filter paper moistened with a 2% solution of saccharose and for 24 hours the growth of the surviving sections were determined. The first phase of hardening was more successful with the coleoptiles kept in saccharose (optimal concentration for Vyatka winter rye 12%), than in water. With the hardening of the coleoptiles in water, the contnet of sugars in them fell sharplh, while in the saccharose solution the content increased, especially rapidly in the first days. Ketoses, in addition, was accumulated 2-3 times more than aldose. One week was sufficient to grarantee high frost resistance, during which the size of osmotic pressure in the cells of the colcontiles of Vyatka winter rye almost doubled. The first phase of hardening proceeded successfully in isotonic solutions of saccharose, raffinose and multose. The protective

Card 2/3

- 17 -

USSR/Plant Physiology - Heat Cycle.

T.

Abs Jour : Ref Zhur - Biol., No 21, 1958, 95659

During hardening in the tissues, the content of frustose increased (more than 6-fold), as well as glucose (more than 2.5 times), saccharose (more than 3.5 times) and some fractions of oligosaccharides. Increase did not increase frost resistance. Paper chromatography showed that all of the sugars studied penetrate into the cells; lactose is not able to be transformed into the tissues in usuable forms of sugar. Hardening in a fructose solution did not grarantee a higher frost resistance in comparison to saccharose. — Yu. B. Lopatkin

Card 3/3